

ZIP CODE ADDITION came through this month - you'll see the additional four digits on my return address. Certainly not needed now, but its another step for the planned automation of some of the mails.

RESUBSCRIPTION TIME AGAIN The next issue will be the last for Volume Three, and Volume Four is currently scheduled to start in November. I run this paper on an Annual Volume basis, for ease in bookkeeping and calculating printing quantities. The subscription rate will again be \$12.50, and subscriptions are now being solicited.

SACKCLOTH AND ASHES heaped upon me by Steve Walters because I left out some data which would make the Bally Black Box (last issue) more understandable and useful. The required data is at the top of page 118.

SERENDIPITY, at least that's what Skip Atkinson expressed, telling me that the little music program by Mike Peace made a nice addition to the 'Old Bent Nose' program, both in the last issue. He suggests the following: Delete lines 1,2,3 and change 710 to: 710 RETURN then change 1090 to read

```
1090 @(A)=@(R);@(R)=0;GOSUB 1150;RETURN
```

and add

```
1150 FOR A=256TO 0STEP -4
1160 &(23)=A;&(21)=A;&(19)=200
1170 NEXT A;&(23)=0;&(21)=0;RETURN
```

TELEPHONE GYRATIONS Moving another step into the computerized communications world, I now have Ma Bell's "call forwarding" system, which allows me to transfer daytime incoming calls to another line. In doing so, the number here changed and is now 408-272-1060.

HOW TO ADD SOUND EFFECTS TO DAREDEVIL

By George Moses

One of the most delightful games I've seen in recent months is the Daredevil game that appeared in the August issue of Arcadian. Unfortunately, because of sketchy directions it took awhile to fully understand how to play the game. It's really very simple. Look at the top of the screen for information of the road ahead and the lateral position of the car on the track. Look at the bottom of the screen for a choice of commands to make the car go faster, slower, right or left, with two intensities for each command. When the command you want to use shows on the screen, simply pull the trigger and watch what happens. If the command goes by before you can trigger it, just wait. It will come around again.

Daredevil lacked only one feature. Sound effects! I have fixed that with the following changes that'll make you think you're at the Indy racetrack with pistons popping and cars crashing into the wall...

You'll need to gain some memory space, so delete lines 1 through 4. Also, delete the NT=0 from line 10. We'll type that in later as a direct command. Now change the following lines:

```
210 FOR C=17TO 22;&(C)=200;NEXT C;&(16)=255-M;&(20)
=100;IF A-M+80>0GOTO 320
270 FOR A=16TO 23;&(A)=0;NEXT A;IF JY(1)RUN
```

Without a line number type the following:
:PRINT;LIST;PRINT ":RETURN ;NT=0;RUN

Don't hit GO until you have your tape player running on RECORD for a few seconds. Press GO and the program will be saved on tape complete with the automatic :RETURN to turn off your interface, the NT=0 command and a RUN to autostart the program from tape. Once you learn to play this game you'll love it!!!

ARCADIAN

```

1 .
2 .
3 .
4 .
5 .INVISIBLE WAR
6 .BY JAMES WINN
120 CLEAR ;FC=7;BC=0;NT=0
130 C=0;D=0;H=0;I=0
140 PRINT "DIFFICULTY
150 PRINT "1. EASY";PRINT "2. MEDIUM";PRINT "3. HARD
180 K=KN(1)c100+2
190 CX=-40;CY=-20;PRINT K
200 IF TR(1)GOTO 220
210 GOTO 180
220 E=K;CLEAR
230 PRINT "HOW MANY LASER BLASTS";PRINT "FOR YOUR SHIP
240 J=KN(1)c3+57
250 CX=-40;CY=-20;PRINT J
255 FOR N=1TO 400;NEXT N
260 IF TR(1)GOTO 280
270 GOTO 240
280 F=J;CLEAR
290 A=RND (76)-38
300 B=RND (76)-38
310 A=A+JY(1)b10
315 GOSUB 710
320 IF A>38A=38
330 IF A<-33A=-33
340 IF B<-33B=-33
370 IF B>A-10IF B<A+10GOTO 525
380 IF JY(1)=0GOTO 400
390 BOX -60,A,11,1,3;BOX -63,A,2,7,3;BOX -60,A,11,7,2
400 IF TR(1)GOTO 440
410 GOTO 310
440 BOX -60,A,11,1,3;BOX -63,A,2,7,3
460 LINE -50,A,4;LINE 60,A,3
470 &(21)=255;&(23)=255
480 LINE -50,A,4;LINE 60,A,3
485 BOX -60,A,11,7,2
490 &(21)=0;&(23)=0;I=I+1
500 IF A>B-10IF A<B+10B=A;H=1;GOSUB 700;GOSUB 800
505 IF I=FGOSUB 700;GOTO 910
508 IF I+10=FGOSUB 700;GOSUB 1000
510 IF TR(1)GOTO 510
520 GOTO 300
525 &(9)=33;FC=127;&(2)=7;&(3)=7
530 BOX 60,B,11,1,3;BOX 60,B,1,5,3
550 LINE 50,B,4;LINE -60,B,3
560 &(21)=255;&(23)=255
570 LINE 50,B,4;LINE -60,B,3
575 BOX 60,B,11,5,2
580 &(21)=0;&(23)=0
590 IF E=1GOTO 650
600 IF E=2GOTO 630
610 IF B>A-7IF B<A+7GOSUB 700;GOSUB 800
630 IF B>A-5IF B<A+5GOSUB 700;GOSUB 800
650 IF B>A-3IF B<A+3GOSUB 700;GOSUB 800
655 IF TR(1)GOSUB 710;GOTO 440

```

James Winn

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b = multiply x

c = divide ÷

ARCADIAN

```

660 GOTO 300
700 &(9)=50;&(2)=0;&(3)=0;FC=7;RETURN
710 &(9)=71;FC=7;&(0)=0;&(1)=0;&(2)=57;&(3)=57;RETURN
800 IF H=1GOTO 805
803 P=-60;Q=A;GOTO 810
805 P=60;Q=B
810 IF Q>33Q=33
812 IF Q<-34Q=-34
815 &(21)=255;&(23)=255;FOR L=1TO 15;BC=7;BC=0;FC=90;BOX P,Q,L,L,1;NEXT L
820 FOR L=1TO 13STEP 3;BOX P,Q,L,L,2;NEXT L;&(21)=0;&(23)=0;CLEAR
840 IF H=1C=C+1;GOTO 900
850 D=D+1
860 FOR N=1TO 200;NEXT N
900 H=0;B=50;CLEAR ;RETURN
910 FC=7;CX=-62;CY=40;PRINT C,D
912 CX=-20;CY=0;PRINT "GAME OVER
915 CY=-35;PRINT " TO PLAY PUSH JOYSTICK
917 FOR N=1TO 1000;NEXT N
920 IF JY(1)RUN
930 GOTO 920
1000 CLEAR ;NT=0;FC=126;BC=0
1010 CX=-60;CY=35;PRINT "10 LASER BLASTS LEFT
1020 FOR L=1TO 10
1030 CX=-30;CY=0;PRINT "CRITICAL!!!
1040 X=-30;Y=0;BOX X,Y,90,8,2
1050 &(17)=12;&(22)=250
1060 FOR M=1TO 100
1070 NEXT M
1080 &(17)=0;&(22)=0
1090 NEXT L;CLEAR ;RETURN

```

```

1 .
2 . SYMMETRICAL ART
3 . BY ROB ROSENHOUSE
4 . FOR SUPER SOFTWARE
5 .
6 . 6/10/1981
7 .
8 .
9 :RETURN ;NT=0;Z=RND (15)
10 CLEAR ;LINE 0,-40,4
20 FOR A=40TO -40STEP -Z
30 LINE 78,A,3;LINE 0,-40,4;LINE -78,A,3;LINE 0,40,4
70 LINE 78,A,3;LINE 0,40,4;LINE -78,A,3;LINE 0,-40,4
80 NEXT A
90 IF C=2GOTO 200
95 C=2
100 FOR A=2TO 82STEP Z
110 BOX 0,0,A,84-A,3
120 NEXT A
150 FOR A=1TO 1000;NEXT A
160 BC=RND (256);FC=BC+12+86RND (32);RUN
200 Z=Z+2;IF Z<1Z=1
205 FOR A=40TO 0STEP -Z
210 LINE 0,A,4;LINE A,0,3;LINE 0,-A,3;LINE -A,0,3;LINE 0,A,3
220 NEXT A
230 C=1;GOTO 150

```


ARCADIAN

TELLING TIME

By Bob Hensel



```

5 :RETURN ;CLEAR ;NT=1;BC=249;FC=7;&(0)=249;&(1)=249;&(2)=126;&(3)=126;&(9)=8
4;PRINT "SCORE",;K=500
10 CY=25;CX=16;PRINT "11"      1
20 CY=29;CX=37;PRINT "12"
40 CY=13;CX=7;PRINT "10"      2
50 CY=0;CX=9;PRINT "9"      3
60 CY=-12;CX=13;PRINT "8"      4
70 CY=-24;CX=22;PRINT "7"      5
80 CY=-30;CX=39;PRINT "6"
130 BOX 40,0,80,80,3;BOX 40,0,74,74,3;BOX -40,42,4,2,1;BOX -40,40,6,2,1;BOX -40
,37,8,4,1;BOX -40,35,10,2,1;BOX -40,33,12,1,1
320 BOX -40,29,14,8,1;BOX -40,28,16,5,1;BOX -40,28,18,3,1;BOX -40,28,16,1,2;BOX
-40,28,14,3,2;BOX -40,28,10,5,2
340 BOX -40,28,3,3,1;BOX -40,30,1,2,1;GOTO 3000
500 % (20203)=256bV+H;CALL 20200;RETURN
890 LINE 39,0,4;GOSUB 900+M;LINE X,Y,E;MU=69;GOTO 990
900 X=39;Y=24;RETURN
905 X=53;Y=21;RETURN
910 X=60;Y=12;RETURN
915 X=63;Y=0;RETURN
920 X=60;Y=-12;RETURN
925 X=53;Y=-20;RETURN
930 X=39;Y=-24;RETURN
935 X=25;Y=-20;RETURN
940 X=18;Y=-12;RETURN
945 X=15;Y=0;RETURN
950 X=18;Y=12;RETURN
955 X=25;Y=21;RETURN
990 LINE 40,1,4;GOSUB 1000+R;IF MK30GOTO 995
992 X=X+2;IF R<9IF R>3X=X-4
994 Y=Y+2;IF R<6Y=Y-4
995 LINE X,Y,E;MU=67;GOTO J
1001 X=48;Y=12;RETURN
1002 X=53;Y=7;RETURN
1003 X=54;Y=1;RETURN
1004 X=53;Y=-7;RETURN
1005 X=48;Y=-12;RETURN
1006 X=40;Y=-14;RETURN
1007 X=30;Y=-12;RETURN
1008 X=25;Y=-7;RETURN
1009 X=26;Y=1;RETURN
1010 X=27;Y=7;RETURN
1011 X=30;Y=12;RETURN
1012 X=40;Y=14;RETURN
3000 R=RND (12);M=RND (12)b5-5;E=1;J=3020;GOTO 890
3020 CY=-32;PRINT "THE TIME IS";A=0;B=0
3026 A=A+JY(1);B=B+JX(1)b5;CY=-40;CX=-65;PRINT #1,A,":",#1,Bc10,#1,RM," ",;IF TR
(1)=0GOTO 3026
3050 CY=0;CX=-71;IF A=RIF B=MGOSUB 6000;GOTO 4000
3070 GOSUB 7000;PRINT #4,R,":",#1,Mc10,#1,RM;GOSUB 8000;GOTO 4000
4000 A=RND (12);B=RND (12)b5-5;CY=-32;PRINT "SET TIME TO";PRINT #4,A,":",#1,Bc10
,#1,RM," ",

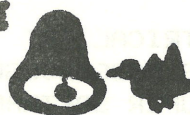
```

Bob Hensel

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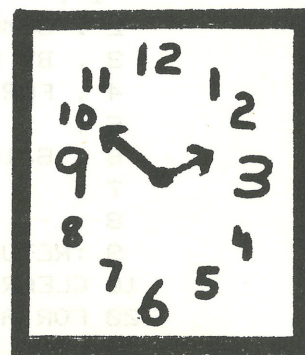
Cottage Grove, MN 55016

SCORE
3



RIGHT

THE TIME IS
2:50



ARCADIAN

```

4045 IF JY(1)=0IF JX(1)=0GOTO 4075
4046 E=2;J=4050;GOTO 890
4050 IF JX(1)#0R=R+JX(1)
4060 IF JY(1)#0M=M+JY(1)65
4065 IF (R(1)+(R>12)R=1
4067 IF (M(0)+(M>55)M=0
4070 E=1;J=4075;GOTO 890
4075 IF TR(1)=0GOTO 4045
4080 CY=0;CX=-71;IF A=RIF B=MGOSUB 6000;E=2;J=3000;GOTO 890
4090 GOSUB 7000;E=2;J=4100;GOTO 890
4100 R=A;M=B;E=1;J=4110;GOTO 890
4110 GOSUB 8000;E=2;J=3000;GOTO 890
6000 PRINT "R I G H T";Y=50;FOR X=110TO 50STEP -3;H=X;Y=Y-2;U=Y;GOSUB K;GOSUB K;
NEXT X
6010 NT=15;FOR Z=1TO 5;GOSUB K;MU=70;GOSUB K;NEXT Z;BOX -40,0,70,10,2;S=S+1;CY=3
0;CX=-65;NT=1;PRINT #1,S,;CX=-77;RETURN
7000 PRINT "W R O N G";NT=10;U=50;H=110;FOR Z=1TO 5;GOSUB K;MU=66;MU=60;MU=48;GO
SUB K;NEXT Z;NT=1;RETURN
8000 FOR Z=1TO 1000;NEXT Z;BOX -40,0,75,40,2;RETURN
>

```

This is an educational game to help children learn to tell time. The computer will randomly set the clock and ask 'THE TIME IS' the hours and minutes can be entered by using JX(1) and JY(1). If the answer is right a bird will fly from the clock to the bell and ring it. One will be added to the score. If you are wrong the bird will appear and chirp 'COO COO! Pull TR(1) when you have completed an answer. The computer will then ask you to set the time to a random time. You can move the hands by using JX(1) and JY(1)

%(20200)=	-43		
2	53		
4	10240		
6	20210	24	68
8	-13871	26	7628
10	-1936	28	5460
12	-32690	30	32612
14	12288	32	2036
16	2432	34	2044
18	527	36	1022
20	-247	38	248
22	78	40	224
		42	0
		%(20244)=	0

The bird is drawn using the Graphic Char Maker by Rich Tietjens (see page 84 of the ARCADIAN) and enter:

ROW	LEFT	RIGHT
0	0	68
1	0	204
2	29	84
3	21	100
4	127	244
5	7	252
6	7	254
7	3	248
8	0	224
9	0	0

This segment is provided in case you want to try your hand at making the bird yourself. You don't have to, since the %(20200) data shown to the right will input the proper figure.

TELLING TIME

To input this program to tape so it'll automatically load the listing plus the data, you'll have to load it in two sections. Just follow these directions.

Type the program into the computer then proofread. DO NOT RUN PROGRAM. Save it on tape by typing this command:

:PRINT ;NT=1;LIST ;PRINT "INPUT 1

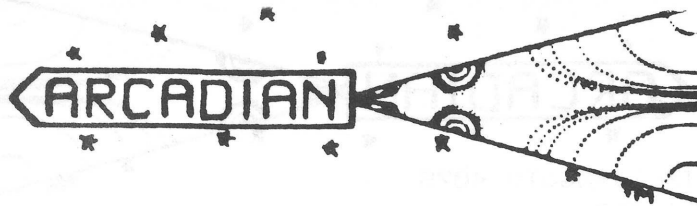
Start your recorder on RECORD, then press GO. As soon as the program is done listing stop your recorder and RESET the computer, clearing the memory. Next, input this 2 line program:

```

10 CLEAR; FOR A = 20200TO 20244STEP 2;PRINT
  "%(",#1,A,"")=",";INPUT " "(A-20200);NEXT A
20 A=KP;:PRINT ;NT=1;CLEAR ;TV=0;TV=1;FOR
  A=20200TO 20244STEP 2;PRINT
  "%(",#1,A,"")=","@ (A-20200);NEXT A;PRINT "RUN

```

Run this program and it will print "%(20200)=" on the screen. See the chart above and input -43. As each succeeding number comes up, input the number in the right column, pressing GO after each entry. After the last entry of zero into address 20244, start your recorder on RECORD. Then press any key on your keypad and the data you have just input will be printed to tape automatically!



```

1 .
2 .KENO II 2.0
3 .(C)1981 MSK
4 PRINT "PROGRAM DISPLAYS KENO CARD AND CASH REMAINING. YOU PICK 1 TO 15 NUM
BERS USING HAND CONTROLLER.",
5 PRINT "NUMBER OF PICKS IS TALLIED NEXT TO GO. IF YOU PICK 1 TO 14 NUMBER
S, PICK GO TO START.
6 PRINT "THE COMPUTER PICKS AND DISPLAYS 20 NUMBERS AND CALCULATES PAYOFF
F.",
7 PRINT " TO SEE PAYOFF TABLE PUSH 'c' ",; IF KP="c" GOTO 2000
8 PRINT
9 INPUT "STAKE" C
10 T=0; CLEAR ; GOSUB 900; C=C-1; CY=-33; CX=43; PRINT "$", #5, C,
20 GOSUB 800; IF N<81 GOSUB 700; IF T<15 GOTO 20
30 GOSUB 600; GOSUB 500; IF H=0 B=0; GOTO 40
35 B=@(R+H-1); C=C+B
40 CX=-59; PRINT "OF", #3, T, " GOT", H, " PAYS$", #5, B,
45 IF C<1 STOP
50 IF TR(1) GOTO 10
60 GOTO 50
500 R=0; IF T=1 RETURN
510 FOR S=1 TO T-1; R=R+S; NEXT S; RETURN
600 H=0; FOR U=1 TO 20; V=RND (80)-1; V=V+10; W=RM; X=-73+W*16; Y=39-V*9; IF PX(X-6,Y+4)
)=0 GOTO 680
610 IF PX(X,Y)=0 U=U-1; GOTO 690
620 H=H+1
630 GOTO 685
680 IF PX(X,Y) U=U-1; GOTO 690
685 BOX X,Y,11,7,3
690 NEXT U; RETURN
700 IF PX(X-6,Y+4) T=T+1; GOTO 720
710 T=T-1
720 CY=-33; CX=-53; PRINT #2, T,; RETURN
800 X=-73; Y=39; BOX X,Y,13,9,3
810 I=X; J=Y; X=X+J*(1)*16; Y=Y+J*(1)*9; X=X+16*(X<-75)-16*(X>75); Y=Y+9*(Y<-25)-9*(
Y>40)
815 IF X=-73 IF Y=-24 IF J*(1)=-1 Y=-33
820 BOX I,J,13,9,3; BOX X,Y,13,9,3; IF TR(1)=0 GOTO 810
830 N=(X+73)*16+1-(Y-39)*9*10; RETURN
900 FOR Y=0 TO 7; CY=39-Y*9; FOR X=1 TO 10; CX=-91+X*16; PRINT #2, X+Y*10,; NEXT X; NEXT
Y; CY=-33; CX=-75; PRINT "GO",; RETURN
2000 PRINT ; FOR T=1 TO 15; GOSUB 500; FOR Q=1 TO T; PRINT #3, "PICK", T, " GET", Q, " WIN
$", #5, @(R+Q-1); NEXT Q; NEXT T; GOTO 9
3000 :PRINT ;LIST ;FOR A=0 TO 119;PRINT "@(", #1, A, ")=", @(A); NEXT A;PRINT ":RETURN
;NT=1";:RETURN ;NT=1
>

```

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KENO

To more easily input the arrays to memory we have included an array-building loop. Type in the KENO program, then proof-read your listing. DO NOT RUN THE PROGRAM.

Type in this program without a line number:
**CLEAR ;FOR A=0 TO 119;PRINT"@(",#1,A,")="";INPUT
 ""@(A);NEXT A
 GO**

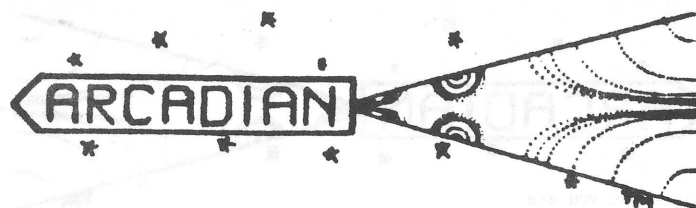
The screen will prompt you for each data entry with "@(0)=", etc. Just input the values from the chart (only the numbers to the right of the equals sign) pressing GO after each entry until you have input all the data through array address @(119).

When the entries are complete, start your tape recorder in the RECORD mode. Then type:

GOTO 3000

GO

Your program and the array you have just created will be saved on tape automatically!



@(0)=3	@(15)=0	@(30)=0	@(45)=0	@(60)=10	@(75)=2400
@(1)=0	@(16)=0	@(31)=0	@(46)=0	@(61)=75	@(76)=13000
@(2)=12	@(17)=1	@(32)=9	@(47)=0	@(62)=380	@(77)=25000
@(3)=0	@(18)=3	@(33)=90	@(48)=0	@(63)=2000	@(78)=0
@(4)=1	@(19)=0	@(34)=1650	@(49)=2	@(64)=12500	@(79)=0
@(5)=42	@(20)=1800	@(35)=18000	@(50)=20	@(65)=19500	@(80)=0
@(6)=0	@(21)=0	@(36)=0	@(51)=142	@(66)=0	@(81)=0
@(7)=1	@(22)=0	@(37)=0	@(52)=1000	@(67)=0	@(82)=0
@(8)=4	@(23)=0	@(38)=0	@(53)=4500	@(68)=0	@(83)=2
@(9)=113	@(24)=0	@(39)=0	@(54)=19000	@(69)=0	@(84)=16
@(10)=0	@(25)=20	@(40)=3	@(55)=0	@(70)=0	@(85)=78
@(11)=0	@(26)=410	@(41)=45	@(56)=0	@(71)=6	@(86)=700
@(12)=1	@(27)=8100	@(42)=335	@(57)=0	@(72)=28	@(87)=3600
@(13)=9	@(28)=0	@(43)=4700	@(58)=0	@(73)=200	@(88)=9000
@(14)=820	@(29)=0	@(44)=18500	@(59)=0	@(74)=850	@(89)=25000

@(90)=25000

@(91)=0

@(92)=0

@(93)=0

@(94)=0

@(95)=0

@(96)=3

@(97)=8

@(98)=32

@(99)=300

@(100)=800

@(101)=2500

@(102)=12000

@(103)=25000

@(104)=25000

@(105)=0

@(106)=0

@(107)=0

@(108)=0

@(109)=0

@(110)=2

@(111)=8

@(112)=21

@(113)=75

@(114)=240

@(115)=2400

@(116)=8000

@(117)=25000

@(118)=25000

@(119)=25000

CONTEST ENTRANTS in this issue were Bob Hensel, with the Telling Time educational program, and Mark Keller with Keno. Judge George Moses was able to respond with both his scores, and some sub-programs that should make these programs a little easier to handle. George is one of the unsung heroes that help my job along. One other hint with Keno, if you decide to choose less than the maximum 14 numbers, run the cursor down to the GO character with the hand controller and press the trigger while there. The departing judge this time will be Craig Anderson, and many thanks...

BLUE RAM ENHANCEMENTS are under way. The next bit of hardware to emerge will be the Extended Basic language in a ROM cartridge. The next issue should have the advertising for this, and deliveries are expected in 30 days.

When the program is loaded and you are ready to put it on tape, you must include certain variables on the tape which must be set independently of the program operation. Use the following procedure:

To start the taping process enter

```
:PRINT; PRINT ".BALLY BLACK BOX"; PRINT;
PRINT ".BY STEVE WALTERS"; PRINT; LIST;
PRINT; PRINT ".STAND BY FOR";
PRINT ":RETURN; :INPUT 6"
```

Do not press GO until the tape is running on record and past the leader, then press GO.

Watch for the last statement (:RETURN; :INPUT 6) to appear. When it appears on the screen, turn the tape off but do not rewind the tape.

Now enter the following:

```
:PRINT; TV=0; TV=6; PRINT "&(9)=81;
&(0)=142; &(1)=142; &(2)=0; &(3)=0;
BC=155; FC=7; H=100; J=68; K=36;
S=10; :RETURN; NT=2; PRINT; PRINT;
GOTO 40"
```

Again do not press GO until the tape is running on record, then press GO. When the statement is done printing, turn the tape off, and it is ready for loading when needed using :INPUT .

The above procedure can be done without resetting the computer and losing the operating program. Therefore, you can check the results with :LIST if you want.

Operating program:

1. Move the probe indicator with the joystick. You can move across the box in a straight line or diagonally as a short-cut to the opposite side.
2. Activate a probe by pulling the trigger after you have moved the indicator to the desired location at the edge of the box.

Probe notation:

A letter denotes the entry location of a probe, and the same letter appears at its exit location. Note that since the probe patterns are the same regardless of which end of a pattern the probe is started, it is not necessary to keep track of which is the entry point and which is the exit point of a given probe.

A plus sign (+) appears at the probe entry location if the probe is reflected back to its starting location.

A minus sign (-) appears at the probe entry location if the probe is absorbed.

3. Guess a ball location by moving the indicator to the location inside the box where you think a ball is hidden, and then pulling the trigger. The marker is left as a reference to help you solve the 5 hidden locations. You can change your guesses by moving the indicator to the marker you think is wrong and pulling the trigger to erase it.

BE CAREFUL to wait to place the 5th. marker (your last guess) until you think you know all 5 hidden locations, because the game ends automatically when you pull the trigger for your 5th. guess. The computer then reveals the actual ball locations and computes your score. A warning is displayed ("LAST GUESS") after the 4th. guess to help you remember this.

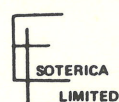
4. A TEST sequence is provided at the start of the program which allows you to make probes while the balls are visible to test your understanding of the rules for how probes move. Do not pull the trigger while the indicator is inside the box until you are finished testing the probe, since this ends the TEST sequence and starts the first game.
5. Proceed to the next game after you have seen the scores by pulling the trigger. At the end of each round (when all players have had the same number of turns) the computer will also show the last score for each player and the average score for all games played by each player.

Scoring: The object of the game is to guess as many balls as possible with the least amount of information (i.e., fewest probes). The score is the total of 5 points for each ball location guessed wrong plus 1 point for each probe made. The smallest score wins.

NOTE: A variable timing delay is built into the program so that a short probe (such as an immediate reflection at the edge of the box) takes approximately the same time to be displayed as does a longer multiple-deflection pattern. Thus, the time to complete a probe does not give the player a dependable hint about how complicated the probe path is.

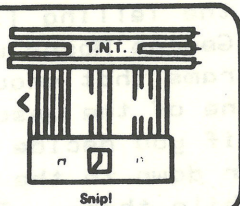
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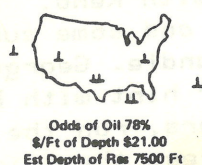


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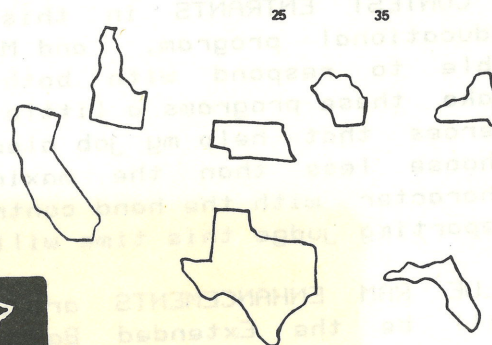
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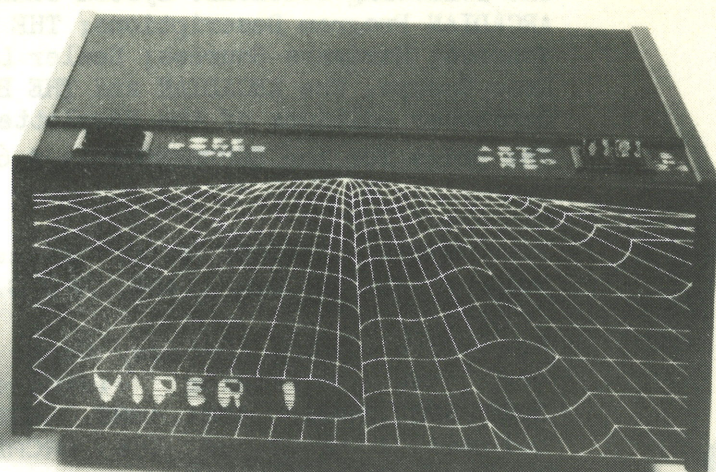
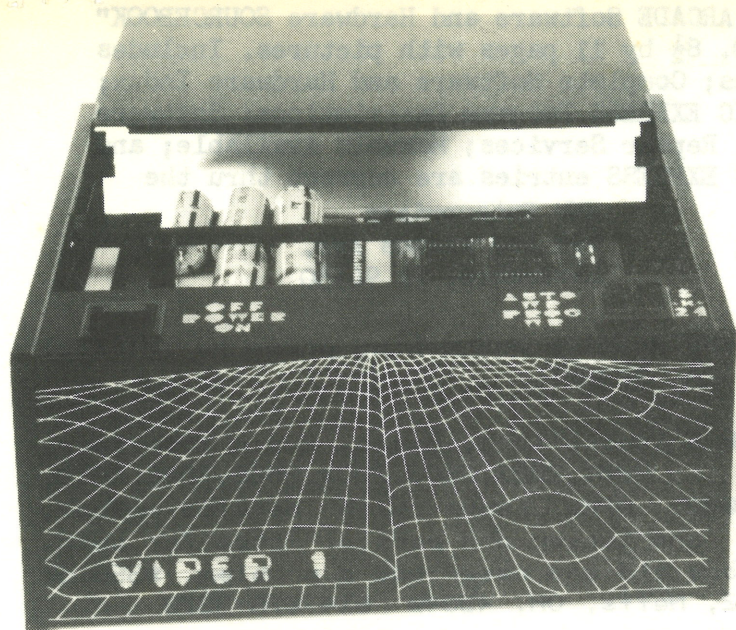
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Everybody knows where California, Texas and Florida are located, but can you identify the state which the computer has selected at random and drawn in the lower left hand corner of the map? It is surely easy with seven choices from which to pick, but if you really need help the computer will assist you by showing its exact location. 10 pts. for the geographer and 5 pts. for the duffer. We give you the three easy states and the other 45 go together like a jigsaw puzzle. Side 2 gives you topographic features and asks for major cities. Red, White and Blue graphics for a patriotic effect. This is the finest in educational software from:

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The VIPER SYSTEM 1 is the first of a series of custom manufactured, quality products made for the Bally Home Computer/Professional Arcade. With this system, you can begin the evolution of your Bally from the Professional Arcade to a powerful graphic computer. The VIPER SYSTEM 1 is a lot more than just a 16K memory expansion. Features and capabilities are listed as follows: one dual position front panel select switch for starting the memory at either 8 or 24K. This will make it convenient for the user to copy any game cartridges and run them in extended RAM where they can be modified or copied to tape. Next, one dual position front panel switch for Auto-Write-Protect or Programmable Write-Protect. The Automatic Write-Protect mode allows the user to load Jay Fenton's excellent new 8K Extended Basic from tape, and then use the Basic to write programs in the remaining 8K. The Programmable-Write-Protect allows you to Write-Protect or Write-Enable the entire 16K RAM board with simple Basic statements. Next, the RAM board located inside the cabinet has two eight position DIP switch packs. Switch pack one enables 4, 8, or 16K bank selectable addressing, and switch pack two controls special bus functions to the Bally and selects either external or internal clocking. SYSTEM 1 also includes a fuse-protected +/- 5 volt and +/- 12 volt power supply. These voltages provide power to the RAM and keyboard interface circuitry. Also included is a heavy duty grounded AC line cord, and filtered AC outlet on the back that is controlled by the front panel switch. The SYSTEM 1 Interface Board provides the bus conversion from the Bally to the VIPER bus, plus a serial keyboard interface which will allow the use of a VIPER or other serialized ASCII keyboard with the system. It also includes one bus cable connecting the VIPER to the Bally. The RAM board and keyboard can be unplugged from the SYSTEM 1 and later plugged directly into the SYSTEM 5 without any changes because the equipment is completely (software and hardware) compatible. For those of you who are home-brewers, when the SYSTEM 1 is upgraded to a SYSTEM 5, the SYSTEM 1 cabinet, power supply, and bus interface card can be used to help prototype your own computer circuits. The entire system is housed in an attractive heavy duty black aluminum cabinet with simulated wood grain side panels and custom silk-screening. The dimensions are 10"x10"x4-1/4".

Due to the response received when originally advertised in past issues of the ARCADIAN, there have been several changes and improvements made to the System RAM card and Interface Card. Therefore, please refer to this advertisement and following advertisements for accurate product information, pricing, and availability. SYSTEM 1 is available now for the special introductory price of \$225, and a free Extended Basic (on tape and documentation) is included.

ADS

The "FALL 1981 BALLY Professional ARCADE Software and Hardware SOURCEBOOK" will be available October 15th. Over 90, 8¹/₂ by 11 pages with pictures. Includes the following Sections: System Summaries; Complete Software and Hardware Index; ARCADIAN Program Descriptions; THE BASIC EXPRESS Program Descriptions; Software Sources; Hardware Sources; Dealer List; Repair Services; Manuals Available; and User Groups. The ARCADIAN and THE BASIC EXPRESS entries are current thru the September editions of the Newsletters.

The price for the SOURCEBOOK is \$ 6.00.

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WANTED ARCADE unit. please send details and asking price to Michael Vogel, PSC #2 Box 11466, APO S. F. CA 96367

For Sale Bally Arcade. Comes with 6 controllers, Basic, Audio Interface, and the following videocades: 2001, 2002, 2003, 2004, 2005, 2009, 2010, 3001, 3002, 3005, 4001, 4002, 5001, 5002. Also comes with service manual, Volumes 1 & 2 of the ARCADIAN and Cursor and partial Three for both. Machine is a little over two years old and never had a problem. \$350 or best offer. Duane Olexa, P.O.Box 212, Neffs, OH, 43940 614-676-3378

Bally Booster T Shirts. Airbrushed in full color \$8 plus \$1 post. and handling. Send sizes and check to Don Gladden, 59400 Nine Mile Rd., South Lyon, MI 48178 Custom shirts also done - call for prices 313-437-3984

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